

SCOPING VISUAL IMPACT ASSESSMENT FOR THE PROPOSED BCR COAL VLAKFONTEIN MINING RIGHT, MPUMALANGA, SOUTH AFRICA

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DECLARATION

I, **Lourens du Plessis**, as an independent consultant compiled this Scoping Visual Impact Assessment and declare that it correctly reflects the findings made at the time of the report's compilation. I further declare that I, act as an independent consultant in terms of the following:

- Do not have any financial interest in the undertaking of the activity, other than remuneration for the work performed in terms of the National Environmental Management Act, 1998 (Act107 of 1998);
- Undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the National Environmental Management Act,1998 (Act 107 of 1998);
- Based on information provided to me by the project proponent, and in addition to information obtained during the course of this study, will present the results and conclusion within the associated document to the best of my professional judgement.

Lourens du Plessis
Professional GISc Practitioner

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EXECUTIVE SUMMARY

BCR Coal (Pty) Ltd (the applicant) is proposing an open pit mining operation, hereafter referred to as the BCR Coal Vlakfontein Mine, situated on Portion (Ptn.) 2, Ptn 11 and Ptn 21 of farm Vlakfontein 108 IT, Ptn 1, 7, 14, and 12 of farm Welgelegen 107 107 IT, Msukaligwa Municipality, Mpumalanga. The proposed site is approximately 5 Km south east of Breyton, 7.5 Km south west of Chrissiesmeer and 14.5 Km north east of Ermelo.

The scope of the work includes a scoping level visual assessment of the issues related to the visual impact. The scoping phase is the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment.

Regionally, the proposed sites is approximately 5 Km south east of Breyton, 7.5 Km south west of Chrissiesmeer and 14.5 Km north east of Ermelo. The broader study area is situated predominately within the Eastern Highveld Grassland vegetation type which is classified as Vulnerable.

Land cover consists primarily of grassland, dryland agriculture and exotic plantations. Mining/Quarrying activities occur to the south west and west of the proposed site. The project site is located within the Upper Vaal water management area whereby the Vaal river and tributaries flow through the broader study area. Various large water bodies can also be found, including the Chrissiesmeer and Burgerspan dams in the north east and south west respectively.

Homesteads and settlements are scattered throughout the study area are present within the study area with majority being located within the 2-10 Km radius in the south west. the town of Breyton is located on the 10 Km radius boundary and beyond.

The N17 and R36 are the national and main arterial roads located within the study area. The N17, which bisects the proposed mining area in the east is the main connector between Johannesburg and Eswatini passing through Springs, Bethal and Ermelo. The R36, which is located south of the proposed site, connects the N1 with Ermelo via Tzaneen and Lydenburg.

There are two (2) formally protected or conservation areas present within the study area. The Chrissiesmeer Protected Environment which is made up of a number of properties lies to the east approximately 5 Km from the proposed site, and the Ahlers Private Nature Reserve is located on the boundary of the 10 Km radius to the south.

The greater environment, while undeveloped, has been transformed by agricultural activities, exotic plantations and mining, leading to the visual quality being low to moderate.

The construction and operation of the proposed BCR Coal Vlakfontein mine will have a visual impact on potentially sensitive visual receptors especially within (but not restricted to) a 10km radius of the proposed project development site. Such visual receptors include people travelling along main and secondary roads, as well as, those residing within the farming homesteads and settlements in the study area.

While no specific mention to visual impact sensitivity was made in the DFFE screening tool, based on the findings of this scoping report and site visit, the sensitivity of the visual environment is considered to be moderate.

Screening Tool sensitivity	Verified sensitivity	Outcome statement/ plan of study	Relevant section motivating verification
Visual Impact Assessment			
N/A	Moderate	Section 8 and Section 9	Section 5- Affected environment

Based on the above preliminary assessment, the anticipated visual impacts on sensitive visual receptors (if and where present) in close proximity to the proposed mining facility are not considered to be fatal flaws for the proposed mine.

1. INTRODUCTION

1.1. QUALIFICATION AND EXPERIENCE OF THE PROFESSIONAL TEAM

Lourens du Plessis (t/a LOGIS) is a Professional Geographical Information Sciences (GISc) Practitioner registered with The South African Geomatics Council (SAGC), and specialises in Environmental GIS and Visual Impact Assessments (VIA).

Lourens has been involved in the application of Geographical Information Systems (GIS) in Environmental Planning and Management since 1990. He has extensive practical knowledge in spatial analysis, environmental modeling and digital mapping, and applies this knowledge in various scientific fields and disciplines. His GIS expertise are often utilised in Environmental Impact Assessments, Environmental Management Frameworks, State of the Environment Reports, Environmental Management Plans, tourism development and environmental awareness projects.

He holds a BA degree in Geography and Anthropology from the University of Pretoria and worked at the GisLAB (Department of Landscape Architecture) from 1990 to 1997. He later became a member of the GisLAB and in 1997, when Q-Data Consulting acquired the GisLAB, worked for GIS Business Solutions for two years as project manager and senior consultant. In 1999 he joined MetroGIS (Pty) Ltd as director and equal partner until December 2015. From January 2016 he worked for SMEC South Africa (Pty) Ltd as a technical specialist until he went independent and began trading as LOGIS in April 2017.

Lourens has received various awards for his work over the past two decades, including EPPIC Awards for ENPAT, a Q-Data Consulting Performance Award and two ESRI (Environmental Systems Research Institute) awards for Most Analytical and Best Cartographic Maps, at Annual International ESRI User Conferences. He is a co-author of the ENPAT book and has had several of his maps published in various tourism, educational and environmental publications.

He is familiar with the "Guidelines for Involving Visual and Aesthetic Specialists in EIA Processes" (Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning) and utilises the principles and recommendations stated therein to successfully undertake visual impact assessments. Although the guidelines have been developed with specific reference to the Western Cape province of South Africa, the core elements are more widely applicable (i.e. within the Mpumalanga Province).

1.2. LEGAL FRAMEWORK

The following legislation and guidelines have been considered in the preparation of this report:

- **The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA):** This report is in line with Appendix 6 of NEMA: Environmental Impact Assessment (EIA) Regulations (2014, as amended) which details the minimum requirements a specialist report must contain for an Environmental Impact Assessment.
- **Guideline for Involving Visual and Aesthetic Specialists in EIA Processes (DEADP, Provincial Government of the Western Cape, 2005):** This guideline was developed for use in the Western Cape, however in the absence of the development of any other guideline, this provides input for the preparation of visual specialist input into EIA processes. The guideline documents the requirements for visual impact assessment, typical issues that trigger the need for specialist visual input, the scope and extent of a visual assessment, information required, as well as the assessment and reporting of visual impacts and management actions.
- **Screening Tool as per Regulation 16 (1)(v) of the Environmental Impact Assessment Regulations, 2014 as amended:** a Screening report was generated for this proposed project, whereby a visual impact assessment as identified as one of the specialist studies that would be required.

1.3. INFORMATION BASE

This assessment was based on information from the following sources:

- Topographical maps and GIS generated data were sourced from the Surveyor General, Surveys and Mapping in Mowbray, Cape Town;
- Professional judgement based on experience gained from similar projects;
- Literature research on similar projects;

- Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of NEMA

1.4. ASSUMPTIONS AND LIMITATIONS

To prepare this Report, LoGis utilised only the documents and information provided by Environmental Management Assistance (EMA) or any third parties directed to provide information and documents by EMA. LoGis has not consulted any other documents or information in relation to this Report, except where otherwise indicated. The findings, recommendations and conclusions given in this report are based on the author's best scientific and professional knowledge, as well as, the available information. This report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken. LoGis and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field, or pertaining to this investigation.

This assessment was undertaken during the planning stage of the project and is based on information available at that time. It is assumed that all information regarding the project details provided by EMA and the Applicant is correct and relevant to the proposed project. This Scoping Visual Impact Assessment and all associated mapping has been undertaken according to the worst-case scenario with the layout provided.

1.5. LEVEL OF CONFIDENCE

Level of confidence¹ is determined as a function of:

- The information available, and understanding of the study area by the practitioner:
 - **3:** A high level of information is available of the study area and a thorough knowledge base could be established during site visits, surveys etc. The study area was readily accessible.
 - **2:** A moderate level of information is available of the study area and a moderate knowledge base could be established during site visits, surveys etc. Accessibility to the study area was acceptable for the level of assessment.
 - **1:** Limited information is available of the study area and a poor knowledge base could be established during site visits and/or surveys, or no site visit and/or surveys were carried out.
- The information available, understanding of the project and experience of this type of project by the practitioner:
 - **3:** A high level of information and knowledge is available of the project and the visual impact assessor is well experienced in this type of project and level of assessment.
 - **2:** A moderate level of information and knowledge is available of the project and the visual impact assessor is moderately experienced in this type of project and level of assessment.
 - **1:** Limited information and knowledge is available of the project and the visual impact assessor has a low experience level in this type of project and level of assessment.

These values are applied as follows:

Information on the study area	Information on the project & experience of the practitioner			
		3	2	1
3		9	6	3
2		6	4	2
1		3	2	1

Table 1: Confidence levels

The level of confidence for this assessment is determined to be **9** and indicates that the author's confidence in the accuracy of the findings is Moderate to High:

¹ Adapted from Oberholzer (2005).

- The information available, and understanding of the study area by the practitioner is rated as **3**
- The information available, understanding and experience of this type of project by the practitioner is rated as **3**

2. METHODOLOGY

The scoping report was undertaken using Geographic Information Systems (GIS) software as a tool to generate viewshed analyses and to apply relevant spatial criteria to the proposed development. A detailed Digital Terrain Model (DTM) for the study area was created from topographical data provided by NASA in the form of a 30m SRTM (Shuttle Radar Topography Mission) elevation model.

The approach utilised to identify potential issues related to the visual impact included the following activities:

- The creation of a detailed digital terrain model (DTM) of the potentially affected environment;
- The sourcing of relevant spatial data. This includes cadastral features, vegetation types, land use activities, topographical features, site placement, etc.;
- The identification of sensitive environments upon which the proposed facility could have a potential impact.
- The creation of viewshed analyses from the proposed project site in order to determine the visual exposure and the topography's potential to absorb the potential visual impact. The viewshed analyses take into account the dimensions of the proposed structures and activities.
- Site visit was undertaken on 13 July 2022.

This report (scoping report) sets out to identify the possible visual impacts related to the proposed BCR Coal Vlakfontein Mine from a desktop level. The methodology as described above has been followed for the assessment of the visual impacts in the scoping phase.

3. PROJECT DESCRIPTION

BCR Coal (Pty) Ltd (the applicant) is proposing an open pit mining operation, hereafter referred to as the BCR Coal Vlakfontein Mine, situated on Portion (Ptn.) 2, Ptn 11 and Ptn 21 of farm Vlakfontein 108 IT, Ptn 1, 7, 14, and 12 of farm Welgelegen 107 107 IT, Msukaligwa Municipality, Mpumalanga. The proposed site is approximately 5 Km south east of Breyton, 7.5 Km south west of Chrissiesmeer and 14.5 Km north east of Ermelo.

The surface sub-outcrop of the coal seams is planned to be mined using an advancing open pit mining method which allows for concurrent filling of the pit. The pit will be used to develop portals which will allow the remainder of the ore to be exploited using underground mining methods. The open pit planned applies a conventional opencast truck and shovel mining philosophy including the following steps:

- Removal of topsoil and storing it at a designated position;
- Removal of the overburden;
- Drilling and blasting will be required to break the hard overburden;
- The waste will be dumped in the pit behind the advancing face where possible with the remainder placed at the designated waste rock stockpile, separate from the topsoil;
- Drilling and blasting of the coal seams;
- Loading and hauling of the ore for stockpiling at the Run-of-Mine (ROM) pad and for transport to the preferred Washing Plant.

The open pit mining philosophy is based on a contractor-operated operation. A production shift cycle operating 9 hours a day, 6 days a week will be adopted.

The project footprint will require the support facilities and infrastructure in order to operate. The infrastructure requirements are:

- Access & Haul roads (with necessary security) including the upgrading of the access point to mining area;
- Contractor's Yard with septic/chemical ablution facilities;
- Offices;
- Weighbridge, workshop and stores (with septic/chemical ablution facilities);
- Diesel facilities and a hardstand;

- Power and Water;
- Stockpiles (topsoil, overburden (waste), subsoil/softs, ROM);
- Crushing and screening facility;
- Surface water management measures (stormwater diversion berms and trenches; pollution control dams etc);
- Medical station; and
- Diesel Generator

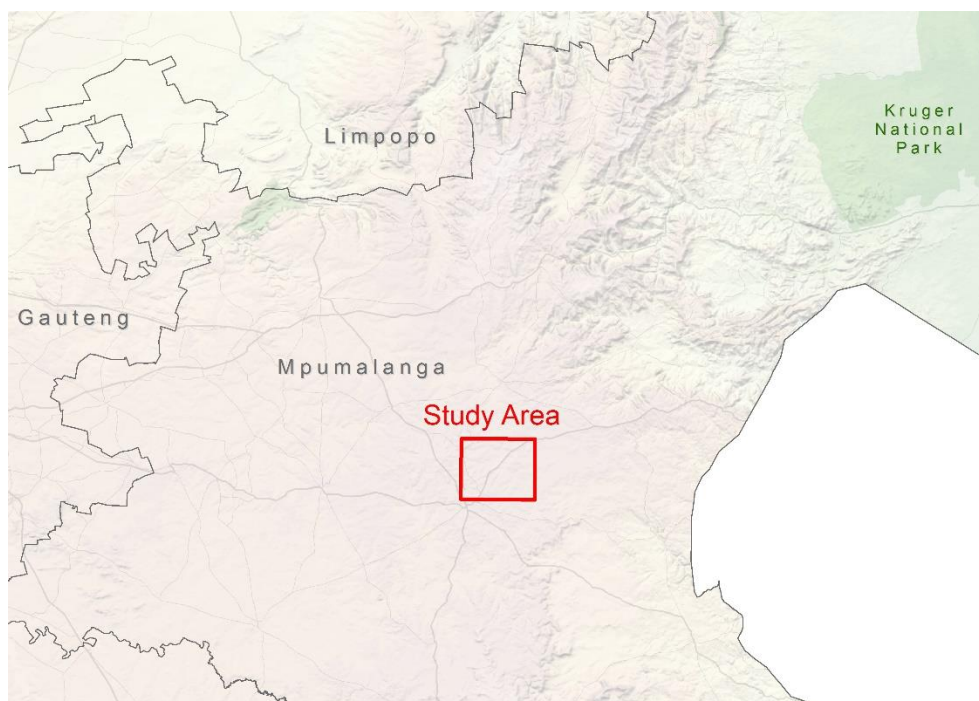


Figure 1: Regional locality of the BCR Coal Vlakfontein Mine

4. SCOPE OF WORK

The scope of the work includes a scoping level visual assessment of the issues related to the visual impact. The scoping phase is the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addressed in an impact assessment.

The main purpose is to focus the impact assessment on a manageable number of important questions on which decision-making is expected to focus and to ensure that only key issues are examined. Additionally, it is to inform the facility layout in order to avoid potential sensitive visual areas, if possible. The study area for the visual assessment includes a minimum 10km buffer zone (area of potential visual influence) from the mining footprint. The study area does not include any major towns, however the N17 national road bisects the proposed project site.

5. THE AFFECTED ENVIRONMENT

Regionally, the proposed sites is approximately 5 Km south east of Breyton, 7.5 Km south west of Chrissiesmeer and 14.5 Km north east of Ermelo.

The study area occurs on land that ranges in elevation from about 1700m above sea level (a.s.l.) along the perennial rivers to about 1780m a.s.l. on the site itself and others areas to the west. Refer to Error! Reference source not found..

The topography consists of flats and gently sloping plains.



Figure 2: Flat topography of the study area

The broader study area is situated predominately within the Eastern Highveld Grassland vegetation type which is classified as Vulnerable.



Figure 3: View of the site from the N17

Land cover consists primarily of grassland, dryland agriculture and exotic plantations. Mining/Quarrying activities occur to the south west and west of the proposed site. The project site is located within the Upper Vaal water management area whereby the Vaal river and tributaries flow through the broader study area. Various large water bodies can also be found, including the Chrissiesmeer and Burgerspan dams in the north east and south west respectively. Refer to Error! Reference source not found..

The site location can be described as fairly remote, with the only populated area being Breyton and KwaZaele in the north west. The study area is sparsely populated with small numbers of scattered homesteads throughout the area.

Homesteads and settlements are scattered throughout the study area are present within the study area with majority being located within the 2-10 Km radius in the south west. the town of Breyton is located on the 10 Km radius boundary and beyond.



Figure 4: Examples of the types of homesteads in the area

It is uncertain whether all of the potentially affected farmsteads are inhabited or not. It stands to reason that the farmsteads that are not currently inhabited will not be visually impacted upon at present. These farmsteads do, however retain the potential to be affected visually should they ever become inhabited again in the future. For this reason, the author of this document operates under the assumption that they are all inhabited.

The N17 and R36 are the national and main arterial roads located within the study area. The N17, which bisects the proposed mining area in the east is the main connector between Johannesburg and Eswatini passing through Springs, Bethal and Ermelo. The R36, which is located south of the proposed site, connects the N1 with Ermelo via Tzaneen and Lydenburg. Other than these main roads, a limited number of secondary roads cross the study area.



Figure 5: View towards the site from the R36

There are two (2) formally protected or conservation areas present within the study area. The Chrissiesmeer Protected Environment which is made up of a number of properties lies to the east approximately 5 Km from the proposed site, and the Ahlers Private Nature Reserve is located on the boundary of the 10 Km radius to the south.

The greater environment, while undeveloped, has been transformed by agricultural activities, exotic plantations and mining, leading to the visual quality being low to moderate.



Figure 6: Mining activities in the area

This study area is not known as a tourist destination, but the various connectors discussed above do give access to the area between Johannesburg and Eswatini, and Tzaneen.

6. VIEWSHED ANALYSIS- SCOPING LEVEL ASSESSMENT

9.1. VISUAL DISTANCE AND OBSERVER PROXIMITY

Proximity offsets (the radial distance between the proposed development and the identified visual receptors) were determined based on the anticipated visual experience of the observer over varying distances. In general, the severity of the visual impact on visual receptors decreases with increased distance from the proposed infrastructure. Therefore, in order to refine the visual exposure of the facility on surrounding areas/receptors, the principle of reduced impact over distance is applied in order to determine the core area of visual influence for the proposed BCR Coal Vlakfontein mine. Proximity offsets for the proposed development footprint are thus established in order to indicate the scale and viewing distance of the facility and to determine the prominence of the structures in relation to their environment.

These proximity offsets are based on the anticipated visual experience of the observer over varying distances. The distances are adjusted upwards for larger facilities and downwards for smaller facilities (i.e. depending on the size and nature of the proposed infrastructure). This rationale was developed in the absence of any known and/or acceptable standards. Therefore, for the purpose of this study, proximity offsets have been calculated from the expected boundary of the site, as indicated on **Map 3** and as follows:

- 0 – 2km. Short distance view where the facility would dominate the frame of vision and constitute a very high visual prominence.
- 2 - 5km. Short to medium distance view where the structures would be easily and comfortably visible and constitute a high to moderate visual prominence.

- 5 - 10km. Medium to long distance view where the facility would become part of the visual environment but would still be visible and recognisable. This zone constitutes a moderate visual prominence.
- 10km. Long distance view of the facility where the structures are not expected to be immediately visible and not easily recognisable. This zone constitutes a lower visual prominence for the facility.

9.2. POTENTIAL VISUAL EXPOSURE

The result of the preliminary viewshed analysis for the proposed facility is shown on **Map 3**. The initial viewshed analyses were undertaken from the mining structures, dumps, stockpiles and general infrastructure. The vantage points utilised were placed at 10m above ground level in order to simulate the infrastructure and activities. This was done in order to determine the general visual exposure (visibility) of the area under investigation, simulating the maximum height of the proposed structures and mining activities associated with the mine.

The viewshed analysis will be further refined once a final mine layout is completed and will be regenerated for the actual position of the infrastructure on the site and actual proposed infrastructure during the EIA phase of the project.

The viewshed analysis does not include the effect of vegetation cover or existing structures on the exposure of the proposed mine, therefore signifying a worst-case scenario.

Map 3 indicates areas from which the proposed BCR Coal Vlakfontein mine could potentially be visible, as well as, proximity offsets from the proposed development area. Typically, structures of this height (i.e. 10m) may be visible from up to 10km away. In this respect, the anticipated Zone of Visual Influence for this facility as calculated from the development footprint (i.e. determined from the edge of the proposed development areas) has been indicated at 10km. The extent of visual exposure within this zone is expected to be very high.

The following is an overview of the findings of the viewshed of BCR Coal Vlakfontein mine, based on the layout illustrated on the Map provided:

- The proposed facility will have a large core area of potential visual exposure on the project site itself, and within a 2km radius thereof. Small pockets of visually screened areas can be found to the far east and far south.

Potential sensitive visual receptors within this visually exposed zone include:

- observers travelling along the N17 national road and the Breyton secondary roads that bisect the site.
- Residents of unknown homestead / farmsteads
- Potential visual exposure becomes more scattered in the medium distance (i.e. between 2 and 5km), with large pockets of visually screened areas to the north east, south east, south and west.

Potential sensitive visual receptors within this visually exposed zone include:

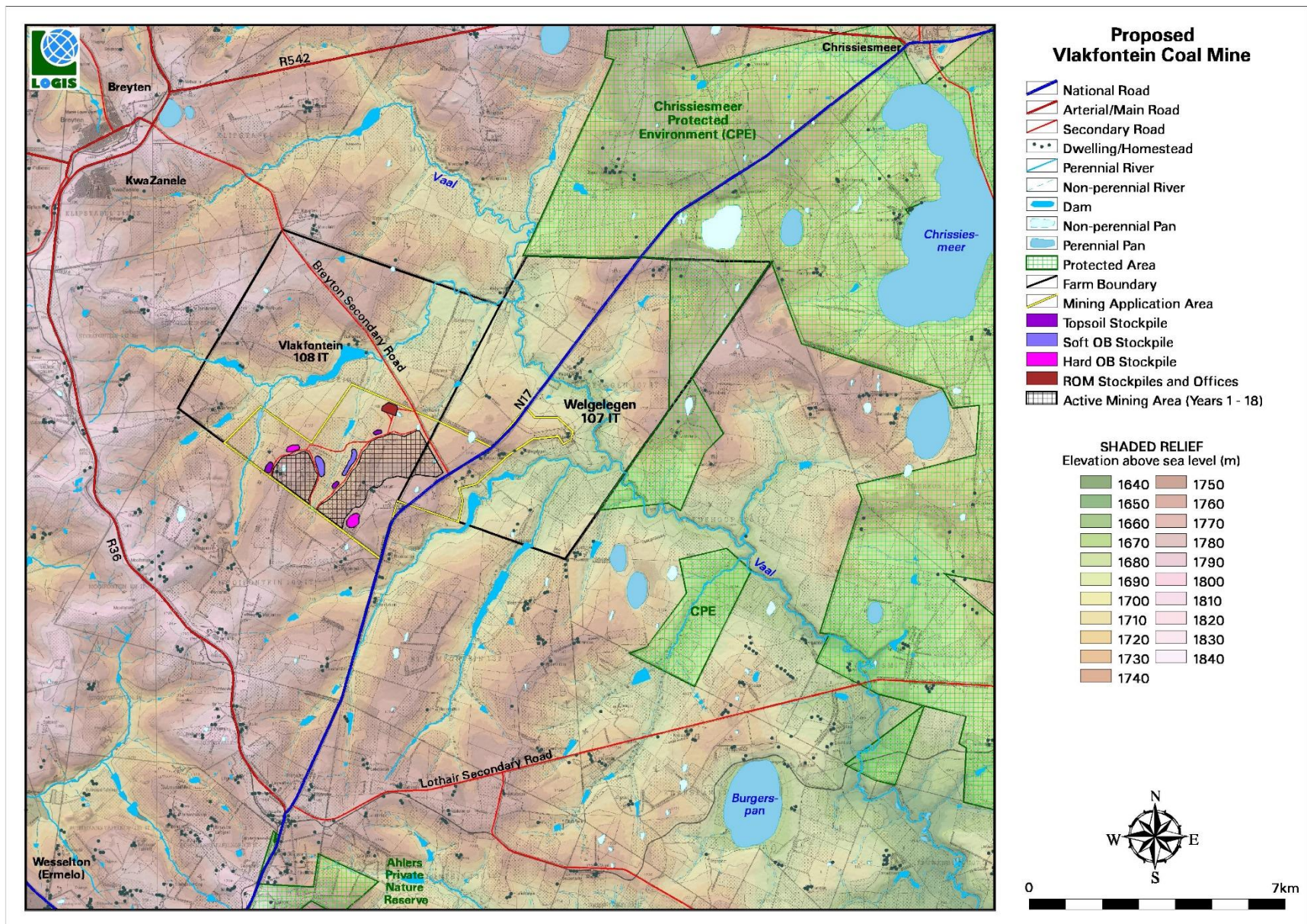
- observers travelling along the N17 national road, R36 regional road and the Breyton secondary road that traverse the site.
- Residents of unknown homestead / farmsteads particularly in the south west and north west
- In the longer distance (i.e. between 5 and 10km offset), the extent of potential visual exposure is significantly reduced with visually exposed areas concentrated to the north east, east and south.

Potential sensitive visual receptors within this visually exposed zone include:

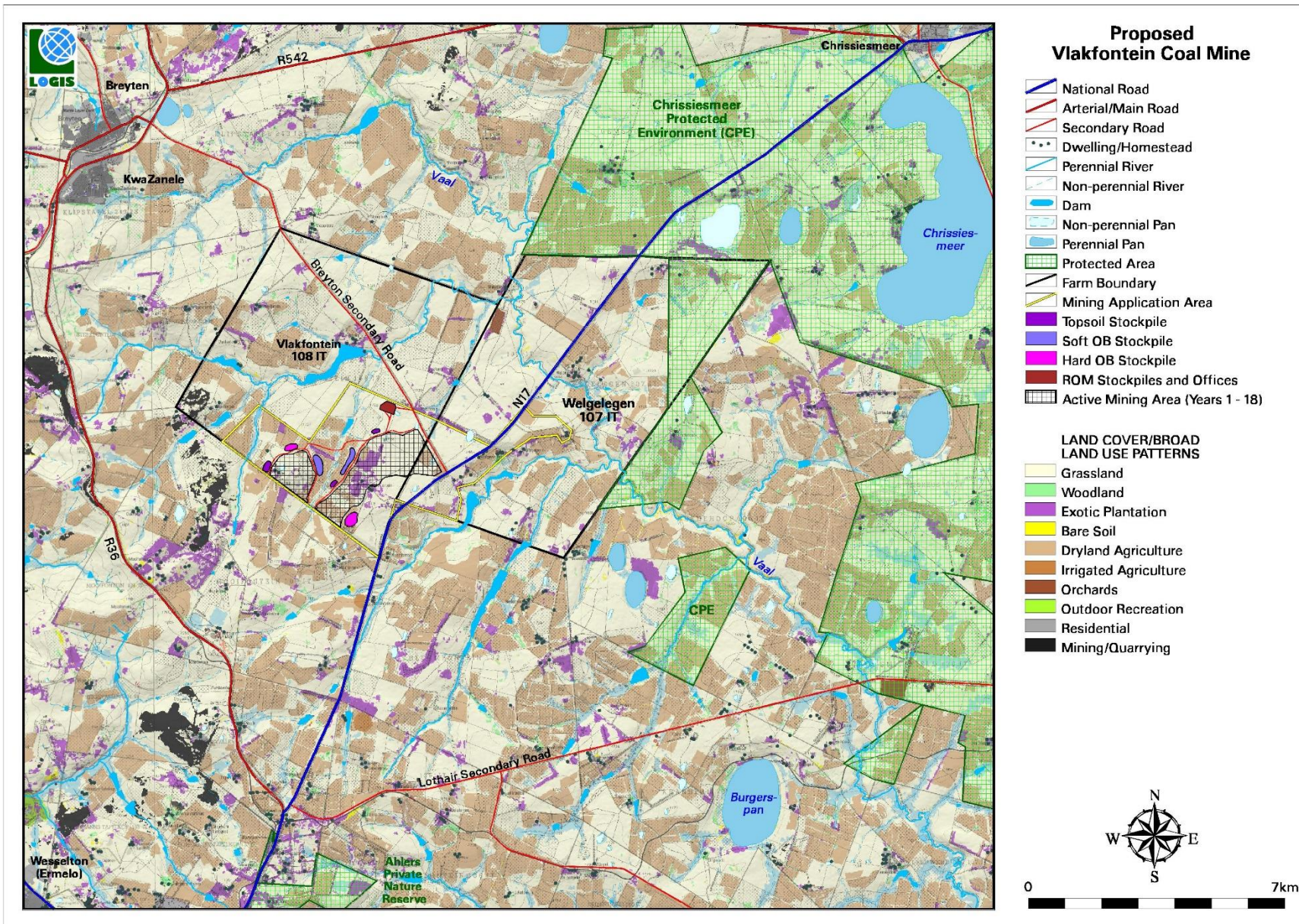
- observers travelling along the N17 national road, R36 regional road and the Breyton and Lothair secondary roads that traverse the site.
- Residents of unknown homestead / farmsteads
- Visitors to the Chrissiesmeer Protected Environment and to a lesser extent Ahlers Private Nature Reserve

-
- Beyond the 10km offset from the proposed site, potential sensitive visual receptors are not likely to be visually exposed to the proposed facility, despite lying within the viewshed.

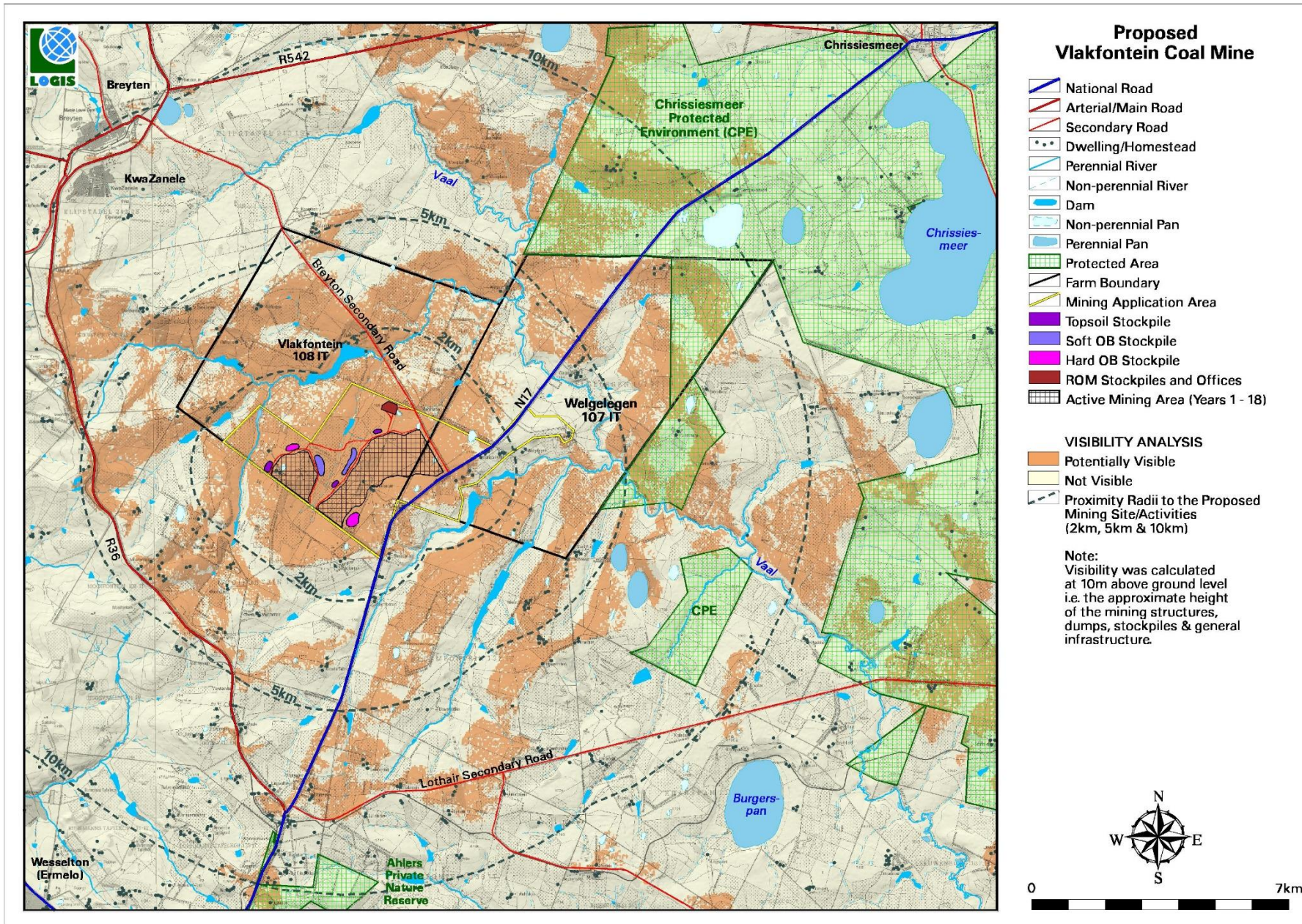
Notwithstanding the fact that the proposed BCR Coal Vlakfontein mine may have a fairly limited area of potential visual exposure, the mine and mining activities, where visible from shorter distances (e.g. within a 2-5km radius), may constitute a high visual prominence, potentially resulting in a high visual impact. This may become evident should potential sensitive visual receptors be identified within this zone during the EIA phase of the project.



Map 1: Shaded relief map of the study area



Map 2: Land cover/broad land use map of the study area



Map 3: Potential visual exposure (viewshed analysis) of the proposed BCR Coal Vlakfontein Mine

7. ANTICIPATED ISSUES RELATED TO THE VISUAL IMPACT

Anticipated issues related to the potential visual impact of the proposed BCR Coal Vlakfontein mine include the following:

- The potential visual impact of the construction of the facility and ancillary infrastructure on sensitive visual receptors in close proximity.
- The visibility of the operational facility and ancillary infrastructure to, and potential visual impact on observers (homesteads and farmsteads) in close proximity.
- The visibility of the operational facility and ancillary infrastructure to, and potential visual impact on observers within the region.
- The visibility of the facility and ancillary infrastructure to, and potential visual impact on observers travelling along the national, main roads, as well as, secondary roads within the study area.
- An investigation into the visibility of the mine to, and potential visual impact on residents of farm residences located within close proximity to the site.
- The potential visual impact of operational, safety and security lighting of the facility at night on observers residing in close proximity to the facility.
- The potential visual impact of the facility and ancillary infrastructure on the visual character of the landscape and sense of place of the region.
- The visual absorption capacity of natural or planted vegetation (if applicable).
- The potential to mitigate visual impacts.

It is envisaged that the issues listed above may potentially constitute a significant visual impact at a local and/or regional scale. These need to be assessed in greater detail during the EIA phase of the project.

8. PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PHASE

Following the establishment of the baseline information pertinent to the development in the Scoping Phase VIA (as undertaken in this report), the primary goal of the Environmental Impact Assessment (EIA) Phase VIA report will be to ensure that visual impacts are adequately assessed and considered so that the relevant authorities can decide if the proposed project has unreasonable or undue visual impacts. The secondary aim is to identify effective and practical mitigation measures, if possible.

Since the purpose of a VIA is not to predict whether specific individuals or entities will find this type of activity pleasing or not but instead to identify the important visual features of the surrounding landscape, especially the features and characteristics that contribute to scenic quality, as the basis for determining how and to what degree a particular project will impact on those scenic values. The study will include the following:

1. Refinement of the baseline study, description of the visual character of the sites and zone of visual influence, if required.
2. Adjust the list of identified visual impacts resulting from the proposed development (with consideration of any public and/or relevant authorities' comments), if required.
3. Assessment of visual impacts based on the following VIA rating criteria, namely:
 - a. Quality of the affected environment (landscape) – the aesthetic excellence and significance of the visual resources and scenery;
 - b. Viewer incidence, perception and sensitivity – the level of acceptable visual impact is influenced by the type of visual receptors.
 - c. Determine the Visual Absorption Capacity (VAC) – the capacity of the receiving environment to absorb the potential visual impact of the proposed development;
 - d. Refine the potential visual exposure (visibility) - the geographic area from which the project may be visible based on any layout changes undertaken between the Scoping and EIA Phase;
 - e. Determine the cumulative visual exposure - the combined or incremental effects resulting from changes caused by a proposed development in conjunction with other existing or proposed activities;
 - f. Visual Impact Index - the combined results of visual exposure, viewer incidence / perception and visual distance of the proposed facility. Values are assigned for each potential visual impact per data category and merged in order to calculate the visual impact index;

4. Assessment of the significance of the visual impacts, rated according to methodology outlined in Section 7 above, which includes:
 - a. Extent, duration, magnitude and probability to determine significance; and
 - b. Significance considered with status (positive, negative or neutral) and reversibility (reversible, recoverable or irreversible) following decommissioning of the proposed facility.
5. Impacts will be rated before mitigation and after, assuming mitigation is possible.
6. Development of mitigation measures to reduce visual impacts and enhance any positive visual benefits, where possible.

9. CONCLUSION AND RECOMMENDATIONS

The construction and operation of the proposed BCR Coal Vlakfontein mine will have a visual impact on potentially sensitive visual receptors especially within (but not restricted to) a 10km radius of the proposed project development site. Such visual receptors include people travelling along main and secondary roads, as well as, those residing within the farming homesteads and settlements in the study area.

There are two (2) formally protected or conservation areas present within the study area. The Chrissiesmeer Protected Environment and the Ahlers Private Nature Reserve. The greater environment, while undeveloped, has been transformed by agricultural activities, exotic plantations and mining, leading to the visual quality being low to moderate.

This study area is not known as a tourist destination, but the various connectors discussed above do give access to the area between Johannesburg and Eswatini, and Tzaneen, which are known as tourist destinations.

9.1. SUMMARY OF DESKTOP VERIFICATION OUTCOME

While no specific mention to visual impact sensitivity was made in the DFFE screening tool, based on the findings of this scoping report and site visit, the sensitivity of the visual environment is considered to be moderate.

Screening Tool sensitivity	Verified sensitivity	Outcome statement/ plan of study	Relevant section motivating verification
Visual Impact Assessment			
N/A	Moderate	Section 8 and Section 9	Section 5- Affected environment

Table 2: Summary of site sensitivity

9.2. REASONED OPINION REGARDING THE ACCEPTABILITY OF THE PROPOSED ACTIVITY

According to the Provincial Government of the Western Cape, Department of Environmental Affairs and Development Planning (DEA&DP) Guideline for Involving Visual and Aesthetic Specialists in the EIA Process (Oberholzer, 2005), the criteria that determine whether or not a visual impact constitutes a potential fatal flaw are categorised as follows:

1. Non-compliance with Acts, Ordinances, By-laws and adopted policies relating to visual pollution, scenic routes, special areas or proclaimed heritage sites.
2. Non-compliance with conditions of existing Records of Decision.
3. Impacts that may be evaluated to be of high significance and that are considered by the majority of the stakeholders and decision-makers to be unacceptable.

In terms of the above and to the knowledge of the author, the proposed development is compliant with all Acts, Ordinances, By-laws and adopted policies, as well as, conditions of existing Records of Decisions.

Since no reported objections from stakeholders or decision-makers within the region have been communicated by the EAP to the author of this report, this assessment has adopted a risk averse approach by assuming that the perception of most (if not all) of the sensitive visual receptors (bar the landowners of the properties earmarked for the development), would be predominantly negative towards the development.

Therefore, with the information available to the specialist at the time of writing this report, it cannot be empirically determined that the statistical majority of objecting stakeholders were exceeded. If evidence to the contrary surfaces during the progression of the development application, the specialist reserves the right to revise the statement below.

Additionally, since this process is at scoping level only, no impact assessments have been undertaken and therefore the author cannot state whether there are any impacts that may have a high significance rating.

Based on the above preliminary assessment, the anticipated visual impacts on sensitive visual receptors (if and where present) in close proximity to the proposed mining facility are not considered to be fatal flaws for the proposed mine.

The following is however recommended:

- Detailed viewsheds and analysis of visual impacts is required in the EIA Phase of the project.
- Determination of the cumulative visual exposure
- Assessment of visual impacts identified
- Detailed mitigation measures for visual impacts as a result of associated infrastructure must be developed in the next phase of the EIA process

10. REFERENCES

Chief Directorate National Geo-Spatial Information, varying dates. 1:50 000 Topo-cadastral Maps and Data.

DEA, 2014. National Land-cover Database 2018 (NLC2018).

DEA&DP, 2011. Provincial Government of the Western Cape. Guideline on Generic Terms of Reference for EAPS and Project Schedules.

Department of Environmental Affairs and Tourism (DEA&T), 2001. Environmental Potential Atlas (ENPAT) for the Limpopo/Mpumalanga Provinces.

NASA, 2018. Earth Observing System Data and Information System (EOSDIS).

National Botanical Institute (NBI), 2004. Vegetation Map of South Africa, Lesotho and Swaziland (Unpublished Beta Version 3.0)

Oberholzer, B. (2005). Guideline for involving visual and aesthetic specialists in EIA processes: Edition 1.

The Environmental Impact Assessment Amendment Regulations. In Government Gazette Nr. 33306, 18 June 2010.